Energy Information Administration www.eia.doe.gov

COUNTRY ANALYSIS BRIEFS

Azerbaijan

Last Updated: October 2009

Background

Azerbaijan is emerging as an important exporter of oil and natural gas and as a transport corridor between Europe and Central Asia. Its strategic location bordering the Caspian Sea has attracted significant international interest in developing its oil and natural gas reserves

With oil production in decline in most countries outside OPEC, Azerbaijan is seen as one of the few non-OPEC countries capable of increasing its output significantly over the next few years. However, conflicting claims over the maritime and seabed boundaries of the Caspian Sea have yet to be agreed among the 5 littoral states (Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan). An agreement on the division of the Caspian's rich oil and natural gas resources would open up new areas of exploration.

Oil

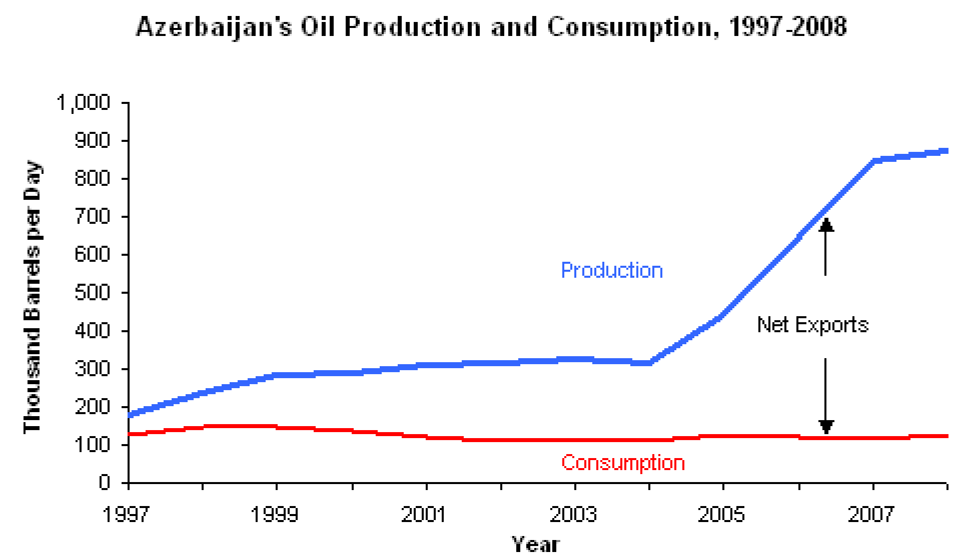
Oil production in Azerbaijan more than quadrupled between 1997 and 2008 to 875,000 bbl/d and is expected to increase further as new wells come online

Azerbaijan's proven crude oil reserves are estimated at 7 billion barrels in January 2009 by the *Oil and Gas Journal*. The country's largest hydrocarbon basins are located offshore in the Caspian Sea, particularly the Azeri Chirag Guneshli (ACG) fields, which accounted for over 80 percent of Azerbaijan's total oil output in 2008.

Sector Organization

The State Oil Company of Azerbaijan Republic (SOCAR) is Azerbaijan's state-owned oil and natural gas company and is responsible for producing oil and natural gas in Azerbaijan, operating the country's two refineries, running the country's pipeline system, and managing the country's oil and natural gas imports and exports. Although the Ministry of Industry and Energy handles exports as well as exploration and production agreements with foreign companies, SOCAR is party to all of the international consortia developing oil and gas projects in Azerbaijan.

The Azerbaijan International Operating Company (AIOC) is a consortium of 10 petroleum companies that have signed extraction contracts with Azerbaijan. AIOC includes: British Petroleum (BP), Chevron, Devon Energy, StatoilHydro, Turkiye Petrolleri, Amerada Hess, ExxonMobil, Inpex, Itochu, and SOCAR. AIOC has made significant direct investments in the development of the ACG fields, as well as the construction of the South Caucasus Pipeline (SCP) and the Baku-Tbilisi-Ceyhan (BTC) pipelines. BP is the largest foreign investor and has been involved in Azerbaijan since 1992.



Source: EIA

Production

Oil production in Azerbaijan increased from 180,000 barrels per day (bbl/d) in 1997 to 875,000 bbl/d in 2008. Production climbed in late 2005 and in 2006 following the startup of the Azeri fields, amounting to about 207,000 bbl/d additional production in 2006 compared with 2005. In 2008 another 228,000 bbl/d leap in production followed the startup of the Guneshli field, expected to produce 320,000 bbl/d at peak. While production has been increasing, domestic consumption has been generally decreasing, from 203,000 bbl/d in 1992 to 128,000 bbl/d in 2008. This has led to a significant increase in oil exports.

The ACG fields are Azerbaijan's largest, located 62 miles east of Baku in the Caspian Sea. Total peak production capacity is expected to reach over 1 million bbl/d in 2009. The fields are operated by BP on behalf of AIOC. There are currently 5 offshore production platforms; a sixth, the Chirag Oil Project, is under construction and is expected to start up in 2013. This new platform will be used to drill new wells in the reservoir for enhanced recovery tying into the existing system. Chirag production is projected at 185,000 bbl/d at startup in the first half of 2010. The BP-led AIOC consortium and the Azeri government are expected to approve a $10 billion project to double output from the Chirag field by 2013. The new venture is expected to extend total Azeri Light oil production of 1 million bbl/d until 2019, from 2010-2012 under the current schedule.

Oil Exports

Azerbaijan had estimated net oil exports in 2008 of 749,000 bbl/d, according to EIA, more than double 2005 exports. According to EIA, the United States imported more than 62,430 bbl/d between January and June 2009, compared with 44,505 bbl/d during the same period of 2008. Most of Azerbaijan's oil is exported via pipeline, but small amounts are shipped by truck and railway. During the period January-August 2009, Azeri sources reported that 16,240 bbl/d of oil products were exported by rail to the port of Batumi, Georgia on the Black Sea.

Export Pipelines

Azerbaijan has 3 major export pipelines:

The majority of oil exports pass through the BTC pipeline system, which runs 1,110 miles from the ACG fields in the Caspian Sea, via Georgia, to the Mediterranean port of Ceyhan, Turkey. From there the oil is shipped by tanker mainly to European markets, with Italy reportedly being the largest importer of Azeri crude in 2008 at about 40 percent of crude exported. The pipeline began exporting in July 2006; it is operated by BP, the largest shareholder, and owned by AIOC members. The capacity of the pipeline is 1 million bbl/d. It was reported that Azeri pipeline crude oil exports in 2008 were 653,300 bbl/d. The BTC pipeline is also used to export Kazakhstan oil, which travels by tanker across the Caspian to the pipeline head at Sangachal Terminal, near Baku. It was reported that Kazakh crude oil exports from the Tengiz field began in October 2008 at 350 bbl/d and had increased to 4,800 bbl/d by February 2009.

The 830-mile long, 100,00-bbl/d-capacity Baku-Novorossiysk pipeline runs from the Sangachal Terminal to Novorossiysk, Russia on the Black Sea. SOCAR operates the Azeri section and Transneft operates the Russian section. 2008 exports were estimated at 29,000 bbl/d by Argus FSU. In April 2009, SOCAR announced plans to nearly double exports to 50,000 bbl/d of oil in 2009 as the BTC is close to capacity because of production growth in the ACG oil fields as well as increasing throughput from Kazakhstan.

The Baku-Supsa pipeline has an estimated capacity of 145,000 bbl/d and runs 520 miles from Baku to Supsa, Georgia on the Black Sea. It is operated by BP and owned by AIOC members. The pipeline was shut down for repairs from October 2006 to August 2008, but due to safety concerns during the Russia-Georgia conflict it was not restarted until November 2008. Argus FSU reported that only 13,000 bbl/d were exported to Supsa in 2008. Azeri sources report that 55,000 bbl/d were exported through this pipeline during the period January-August 2009. The pipeline is used by ExxonMobil Company to export its share of oil from the ACG fields because ExxonMobil, although it is a participant in AIOC, is not a participant in the BTC pipeline.

Transhipment of Kazakh oil via Azerbaijan

On October 2, 2009 Azerbaijan and Kazakhstan signed a series of agreements to facilitate and increase exports of Kazakh oil via Azerbaijan. Reportedly some 100,000 bbl/d is moving currently via the BTC pipeline and by rail to Georgia's Black Sea ports and these routes will be expanded. SOCAR and Kazmunaigas also agreed to study the feasibility of a trans-Caspian pipeline.

Downstream/Refining

Azerbaijan has a crude oil refining capacity of 399,000 bbl/d as of January 2009, according to the *Oil and Gas Journal*. Azeri crude oil is refined domestically at two refineries: the Baku refinery, with a capacity of 239,000 bbl/d, and the New Baku refinery, with a capacity of 160,000 bbl/d.

Natural Gas

With the startup of the Shah Deniz natural gas and condensate field in 2007, Azerbaijan went from being a net natural gas importer to a net exporter, shipping increasing amounts of natural gas via Turkey to Europe

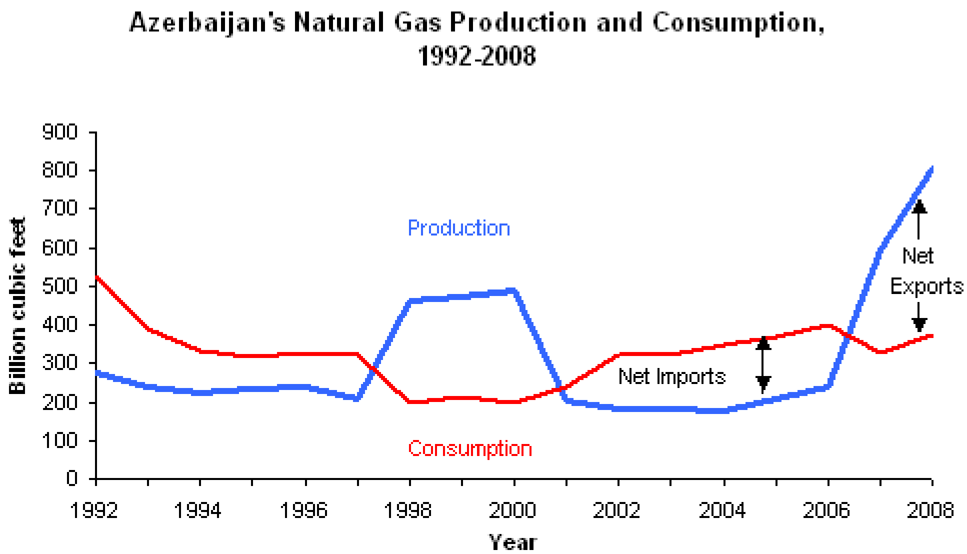
According to the *Oil and Gas Journal*, Azerbaijan has proven natural gas reserves of roughly 30 trillion cubic feet (Tcf) as of January 2009.

Sector Organization

Azerigaz, a SOCAR subsidiary, is responsible for natural gas processing, transport, distribution, and storage, mainly in the domestic market. Azneft, another SOCAR subsidiary, is responsible for exploration, development and production from the older onshore and offshore natural gas fields owned directly by SOCAR. AIOC is the largest foreign joint venture in association with SOCAR, and is involved in the development of the ACG oil and gas fields and the Shah Deniz gas field. Shareholders in the Shah Deniz consortium are: BP (25.5%), StatoilHydro (25.5%), Total, Lukoil, SOCAR, Naftiran each hold 10%, and TPAO (9%). StatoilHydro and BP are the operators, responsible for commercial and technical operations, respectively.

Production

In 2008, Azerbaijan produced 572 billion cubic feet of natural gas and consumed 376 billion cubic feet. Almost all of Azerbaijan's natural gas is produced from offshore fields. The country's leading natural gas fields are the ACG and the new Shah Deniz natural gas and condensate field, which started up in 2007. The Guneshli field, part of the ACG oil and gas fields system, provides associated gas to the Azerigaz system for domestic use via an undersea gas pipeline to Sangachal Terminal at Baku. The Sangachal Terminal, located south of Baku, is one of the world's largest integrated oil and gas processing terminals. It receives, stores, and processes both crude oil and natural gas from the ACG fields and from Shah Deniz, then ships these hydrocarbons through the BTU and SCP pipelines for export.



Source: EIA

Azerbaijan's major natural gas production increases in the future are expected to come from the continuing development of the Shah Deniz field. Industry analysts estimate that Shah Deniz is one of the world's largest natural gas field discoveries of the last 20 years. According to the project's technical operator, BP, the field contains potential recoverable resources of roughly 15 Tcf of natural gas and 600 million barrels of condensate. Shah Deniz is located offshore in the Caspian Sea, approximately 60 miles southeast of Baku.

Phase 1 of the Shah Deniz field's development was completed in 2007 and includes a fixed offshore platform, 2 subsea pipelines to bring the hydrocarbons ashore, and a new onshore gas-processing terminal adjacent to the existing oil terminal at Sangachal, near Baku. The Shah Deniz consortium members (most of whom are also members of AIOC) began producing natural gas for export during spring 2007. The field produced 110 Bcf in 2008 and is expected to increase production to 270 Bcf in 2009. Phase 1 output is expected to peak at 304 billion cubic feet as well as 45,000 bbl/d of condensate in 2010. Phase 2 of the Shah Deniz development is expected to have peak capacity of 700 Bcf but its completion is being delayed from 2013-2014 to 2016 due to lack of a transit agreement between Turkey and Azerbaijan, according to statements by StatoilHydro in May 2009.

Exports

Azerbaijan became a net exporter of natural gas in 2007 with the startup of the Shah Deniz natural gas field; in prior years it had been importing natural gas from Russia. In 2008, Azerbaijan exported an estimated 196 bcf, shipping it via the South Caucasus Pipeline (SCP).

South Caucasus Pipeline (SCP)

The main conduit for Azerbaijan's natural gas exports is the 429-mile SCP, also known as the Baku-T'bilisi-Erzurum pipeline (BTE), which runs parallel to the BTC oil pipeline for 429 miles, most of its route, before connecting to the Turkish gas pipeline network at Horasan. The pipeline began exporting in 2007 with an initial capacity of 233 Bcf per year, which is to be increased in the future to 700 Bcf with the addition of compression stations. The Shah Deniz consortium owns and operates the pipeline.

Proposed Pipelines

Azerbaijan has been involved in negotiations with both Turkey and Russia in 2009 over 2 competing export pipeline proposals for its Shah Deniz Phase 2 natural gas output. These pipelines, Nabucco and South Stream, are both still in the early planning stages.

The proposed Nabucco pipeline would run for 2,050 miles from Erzurum, Turkey to Baumgarten, Austria, passing through Bulgaria, Romania, and Hungary. The pipeline's feasibility rests on its ability to tap into the large natural gas resources of the Caspian area. An agreement between the European countries involved was signed July 13, 2009 in Ankara. Although Azerbaijan has expressed support for Nabucco, Azerbaijan is not currently a party to the Nabucco agreements, nor is any other potential gas producer.

The South Stream pipeline is another proposal to transport Russian and Caspian natural gas to Europe via a pipeline running under the Black Sea, through Turkish territorial waters, with terminals ending in Italy and Austria. It is widely seen as a rival to Nabucco. Azerbaijan is not a party to the South Stream pipeline agreements negotiated between Russia and its pipeline transit countries. However, on June 29, 2009 Azerbaijan and Russia signed a contract for Azerbaijan to export natural gas into southwestern Russia starting in January 2010. The amount of gas agreed, 17.6 bcf per year, is modest but could be increased. A Soviet-era gas pipeline between Baku and southern Russia that runs 200 km along the Caspian coast is being modernized, according to both Russian and Azeri press reports.

There has also been international discussion of a Trans-Caspian subsea gas pipeline. However, this would require an agreement among the 5 littoral states of the Caspian Sea, which is not expected to happen in the near or mid-term.

Natural Gas Trade with Iran

Due to tensions between Azerbaijan and Armenia, Azerbaijan in late 2006 began a swap deal with Iran that provides natural gas to Azerbaijan's geographically separate Nakhchivan enclave. Azerbaijan ships natural gas into Iran via the Baku-Astara Pipeline and Iran then delivers the gas via a new 30-mile pipeline into the enclave. Iran receives a 15 percent commission on transit fees. Transit levels started at 2.47 Bcf/y in 2006 and were slated to rise to 12.4 Bcf/y by 2009.

Profile

Energy Overview

Proven Oil Reserves (January 1, 2009E)	7 billion barrels
Oil Production (2008E)	875 thousand barrels per day, of which 99% was crude oil.
Oil Consumption (2008E)	126 thousand barrels per day
Crude Oil Distillation Capacity (2009E)	399 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2009E)	30 trillion cubic feet
Natural Gas Production (2008E)	572 billion cubic feet
Natural Gas Consumption (2008E)	376 billion cubic feet
Recoverable Coal Reserves (2007E)	None
Coal Production (2007E)	None
Coal Consumption (2007E)	None
Electricity Installed Capacity (2006E)	5.2 gigawatts
Electricity Production (2007E)	19.2 billion kilowatt hours
Electricity Consumption (2007E)	19.6 billion kilowatt hours
Total Energy Consumption (2006E)	0.7 quadrillion Btus*, of which Natural Gas (60%), Oil (37%), Hydroelectricity (3%),
Total Per Capita Energy Consumption (2006E)	86.7 million Btus
Energy Intensity (2006E)	76,579 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2006E)	39.8 million metric tons, of which Oil (44%), Natural Gas (56%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2006E)	4.9 metric tons
Carbon Dioxide Intensity (2006E)	4.36 Metric tons per thousand $2000-PPP**

Oil and Gas Industry

Major Oil/Gas Ports	Baku, Sangachal (BTC)
Foreign Company Involvement	Agip, Chevron, ExxonMobil, Lukoil, SOCAR, Statoil, TotalFinaElf
Major Oil Fields (production, bbl/d)	ACG (400,000 bbl/d)

Major Natural Gas Fields (production, Bcf/d)	Shah Deniz (2006): 350 bcf per year by 2009
Major Pipelines (capacity, bbl/d)	BTC Pipeline (1 million bbl/d, 42”), Western Early Oil (155,000 bbl/d, 20”), Northern Early Oil (95,000 bbl/d, 20”)
Major Refineries (capacity, bbl/d)	Azneftyag—Baku (238,978), Azneftyanajag—New Baku (160,000)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power.
**GDP figures from Global Insight estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

EIA: Country Information on Azerbaijan

U.S. Government

CIA World Factbook
U.S. Department of State: Background Notes
U.S. Embassy, Baku
Azerbaijan International
European Bank for Reconstruction and Development
World Bank

Associations and Institutions

Azerbaijan Business C
British Petroleum
Nabucco Pipeline Project
SOCAR
Statoil Hydro

Sources

Alexanders Gas and Oil Connection
Allbusiness
Azeri Times
BakuToday
Bloomberg
British Petroleum
Business Eastern Europe
Business Monitor International
CIA World Factbook
The Economist
Eurasianet
Eurasia Insight
The Financial Times
Global Insight
Hurriyet Daily News
IMF
Offshore Technology
Nezavisimaya Gazette
New Europe Weekly
Petroleum Intelligence Weekly
PR Newswire
Reuters
RiaNovosti
Silk Road Intelligencer
SOCAR
Trend Daily Economic News
UPI
Upstream Online
U.S. Energy Information Administration
Wikipedia

Contact Info

cabs@eia.doe.gov
(202)586-8800
cabs@eia.doe.gov